WHAT IS CLAIMED IS

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1. A high-speed digital enhancement method for singled color images, comprising:

a. computing a normalized light dynamic range compressed image;

b. computing a normalized dark dynamic range compressed image; and

c. computing a balanced dynamic range compressed image, using said normalized light and dark dynamic range compressed images.

2. The method of claim 1, wherein said step of computing a normalized light dynamic range compression image further includes computing a light dynamic range compressed image.

3. The method of claim 2, wherein said step of computing a light dynamic range compressed image is carried out according to Eqn.s 2.

4. The method of claim 1, wherein said step of computing a normalized dark dynamic range compressed image further includes computing a dark dynamic range compressed image.

5. The method of claim 4, wherein said step of computing a dark dynamic range compressed image is carried out according to Eqn. 3.

6. The method of claim 1, where the computation of said light and dark normalized dynamic range compressed images includes using look-up tables.

7. A method for dynamic range compression and color reconstruction of a color image, the image having a plurality of original colors and a single original norm, the method comprising:

a. obtaining a balanced dynamic range compressed norm of the image;

b. dividing said balanced dynamic range compressed norm by the original norm; and

c. reconstructing each color by multiplying each original color by a quotient of said balanced dynamic range compressed norm divided by the original norm.

8.   The method of claim 7, wherein said step of reconstructing is carried out through the use of Eqn. 8.

9.   The method of claim 7, wherein said step of reconstructing includes using a two dimensional lookup table (LUT) of $\dfrac{I_{bal}(i, j)}{N(i, j)}$.

10.   The method of claim 7, wherein said step of reconstructing includes using a uni-dimensional lookup table (LUT) of $\dfrac{1}{N(i, j)}$.